Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) An isolated polynucleotide encoding ~~an MKK1~~ **a megakaryocytic protein tyrosine kinase 1** protein **that has the amino acid sequence depicted in SEQ ID NO. 2.**

2. (Previously presented) The isolated polynucleotide of claim 1 having the nucleotide sequence depicted in SEQ ID NO. 1.

3.-6. (Canceled)

7. (Currently amended) A recombinant DNA vector containing a polynucleotide sequence that encodes ~~an MKK1~~ **a megakaryocytic protein tyrosine kinase 1** protein **that has the amino acid sequence depicted in SEQ ID NO. 2**.

8.-9. (Canceled)

10. (Previously presented) An engineered host cell that contains the recombinant DNA vector of claim 7.

11. (Withdrawn) An antisense molecule containing a sequence complementary to at least a part of the coding sequence of an MKK1 protein which inhibits translation of the MKK1 mRNA in a cell.

12. (Withdrawn) An antisense molecule containing a sequence complementary to at least a part of the coding sequence of an MKK2 protein which inhibits translation of the MKK2 mRNA in a cell.

13. (Withdrawn) An antisense molecule containing a sequence complementary to at least a part of the coding sequence of an MKK2 protein which inhibits translation of the MKK2 mRNA in a cell.

14. (Withdrawn) An isolated recombinant MKK1.

15. (Withdrawn) The isolated recombinant MKK1 of claim 14 comprising the amino acid sequence depicted in FIGS. 1A and 1B.

16. (Withdrawn) An isolated recombinant MKK2.

17. (Withdrawn) The isolated recombinant MKK2 of claim 16 comprising the amino acid sequence depicted in FIGS. 2A and 2B.

18. (Withdrawn) An isolated recombinant MKK3.

19. (Withdrawn) The isolated recombinant MKK3 of claim 18 comprising the amino acid sequence depicted in FIGS. 3A and 3B.

20. (Withdrawn) A fusion protein comprising MKK1 linked to a heterologous protein or peptide sequence.

21. (Withdrawn) A fusion protein comprising MKK2 linked to a heterologous protein or peptide sequence.

22. (Withdrawn) A fusion protein comprising MKK3 linked to a heterologous protein or peptide sequence.

23. (Withdrawn) A monoclonal antibody which binds to an eptitope of MKK1.

24. (Withdrawn) A monoclonal antibody which binds to an epitope of MKK2.

25. (Withdrawn) A monoclonal antibody which binds to an epitope of MKK3.

26. (Currently amended) A method for producing ~~recombinant~~ **a megakaryocytic protein tyrosine kinase 1** ~~MKK1~~ comprising:

(a) culturing a host cell transformed with the recombinant DNA ~~expression~~ vector of claim 7 and which expresses **said megakaryocytic protein tyrosine kinase 1** ~~MKK1~~; and

(b) recovering the **megakaryocytic protein tyrosine kinase 1** ~~MKK1 gene product~~ from the cell culture.

27.-28. (Canceled)

29. (Withdrawn) A method of inhibiting the effects of signal transduction by an endogenous MKK protein in a cell comprising delivering a DNA molecule encoding a signalling incompetent form of the MKK protein to the cell so that the signalling incompetent MKK protein is produced in the cell and competes with the endogenous MKK protein for access to molecules in the MKK protein signalling pathway which activate or are activated by the endogenous MKK protein.

30. (Withdrawn) The method of claim 29 wherein the DNA molecule encoding a signalling incompetent form of the MKK protein is delivered to the cell by a viral vector.

31. (Currently amended) The isolated polynucleotide of claim 1, wherein the isolated polynucleotide **is** ~~encodes an MKK1 protein having the amino acid sequence depicted in SEQ ID NO. 2, or~~ the full length complement of a polynucleotide encoding said MKK1 protein.

32. (Currently amended) The recombinant DNA vector of claim 7, wherein the polynucleotide **is** ~~encodes an MKK1 protein having the amino acid sequence depicted in SEQ ID NO. 2, or~~ the full length complement of a polynucleotide encoding said MKK1 protein.

33. (Previously presented) An isolated polynucleotide that hybridizes to the polynucleotide of claim 1 under stringent conditions, wherein the isolated polynucleotide or its complement encodes a naturally occurring MKK1 protein, wherein said stringent conditions are selected from the group consisting of:

(a) 0.15 M NaCl/0.0015 M sodium citrate/0.1% SDS at 50.degree. C. for washing;

(b) 50% (vol/vol) formamide with 0.1% bovine serum albumin/0.1% Ficoll/0.1% polyvinylpyrrolidone/50 mM sodium phosphate buffer at pH 6.5 with 750 mM NaCl and 75 mM sodium citrate at 42.degree. C. during hybridization; or

(c) hybridzation in 50% formamide, 5.times.SSC, 5.times.Denhardt's solution, 50 g/ml sonicated salmon sperm DNA, 0.1% SDS, and 10% dextran sulfate at 42.degree., with washes at 42.degree. in 0.2.times.SSC and 0.1% SDS.

34. (Previously presented) The method of claim 33, wherein the isolated polynucleotide or its complement encodes an MKK1 protein having the amino acid sequence depicted in SEQ ID NO. 2.